

Current Status, Distribution, and Abundance

General Status, Distribution, and Abundance

North American bison have been listed as “Near Threatened” in the International Union for Conservation of Nature’s Red List of Threatened Species. The Near Threatened listing is given when a species does not currently qualify for Critically Endangered, Endangered, or Vulnerable, but is close to qualifying for, or is likely to qualify for, a threatened category in the near future (Gates et al., 2010). As of 2008, Gates et al. (2010) estimates that there are currently 20,504 plains bison in 62 conservation herds within the United States and Canada. Of the 62 conservation herds, 87 percent are believed to be within the original range of plains bison (Gates et al., 2010). There are two types of conservation herds in North America. The first are captive herds, which reside within a perimeter fence and are often actively managed (Boyd, 2003). The second are free-ranging herds, which are herds that are not contained within a fence, but may have restricted movement due to topographic or sociopolitical barriers (Boyd, 2003). As of 2003, 13 herds were considered free-ranging and accounted for 8,337 bison (Boyd, 2003).

An important factor in the evaluation of the current status of bison is an evaluation of the minimum viable population (MVP). The MVP is the minimum number of individual animals in a population that is required to maintain a viable population (Soulé, 1989). Gross and Wang (2005) used a simulation model to demonstrate that under ideal management conditions a bison population of 400 was likely to retain 90 percent of its current genetic diversity with a 90 percent probability for 200 years. In order to ensure that management does not impact the viability of a herd, it is recommended that its size should be closer to 1,000 bison (Freese et al., 2007; Dratch and Gogan, 2010; Gates et al., 2010). Currently 74 percent of plains bison conservation herds have populations of less than 400 individuals, with 32 percent having fewer than 50 (Boyd, 2003; Gates et al., 2010). There are five plains bison conservation herds that have over 1,000 animals: Yellowstone National Park; Custer State Park in South Dakota; The Nature Conservancy’s Medano-Zapata Ranch in Colorado and the Tallgrass Prairie Preserve in Oklahoma; and British Columbia’s Pink Mountain (Boyd, 2003; Gates et al., 2010).

Mexico

Historically bison were found within five states in northern Mexico, but until recently wild bison were only found in the borderlands between the Janos region of Chihuahua and southwestern New Mexico (List et al., 2007; Gates et al., 2010). Bison were added to Mexico’s red list of endangered species in 1994, and the most recent version, published in 2002, lists the Janos-Hildago herd as “endangered wildlife,” whose management falls to the National Commission of Protected Natural Areas (Gates et al., 2010). The Janos-Hildago herd is legally protected within Mexico, but when it crosses into New Mexico it is considered livestock (Gates et al., 2010). “The Institute of Ecology of the National University of Mexico is advocating legal protection of the herd in both countries,

including protection under international treaties on migratory wildlife species between Mexico and the U.S.” (Gates et al., 2010, pp. 64).

The large grasslands of the Janos-Casas Grande in northwestern Mexico has been identified as the best location for bison conservation within Mexico, and a series of stakeholder and science workshops have been held in the boundary region to identify conservation needs and potential strategies for advancing bison recovery (Gates et al., 2010). One of these strategies is to reintroduce a plains bison conservation herd to the region. The U.S.’s National Park Service (NPS) donated 23 bison from Wind Cave National Park to the Working Group for Recovery of Bison in Mexico, which is led by the National Commission of Protected Natural Areas (Gates et al., 2010). In November 2009, the 23 bison were transferred from Wind Cave National Park to The Nature Conservancy’s Rancho El Uno Ecological Reserve, which is located in the Janos Biosphere Reserve in Chihuahua State. “These bison are the foundation stock for a breeding herd that will be used to repopulate other areas, with the ultimate goal of restoring the ecological role of bison in the grasslands of northern Mexico. The bison will provide opportunities for ecological research and will serve as a focal species for educational outreach” (Gates et al., 2010, pp. 83). In the Columbia Valley, in the State of Coahuila, there is a privately owned herd that ranges over a large region with minimal management. Gates et al. (2010) suggest this region could be an important area for bison recovery within Mexico.

Canada

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) ranks plains bison as threatened, meaning “a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.” It also gives them a D1 +2 ranking, which indicates that the population is estimated to have less than 1,000 mature individuals and a very restricted region of occupancy (less than 20 square kilometers) or number of locations (less than five), “such that it is prone to the effects of human activities or stochastic events within a very short time period in an uncertain future, and is thus capable of becoming endangered or extinct in a very short time period” (COSEWIC, 2009). The report also notes that as of May 2004, plains bison could be found in British Columbia, Alberta, and Saskatchewan (COSEWIC, 2009). COSEWIC is in the process of reviewing the status of bison within Canada. Further information pertaining to the distribution and status of bison in Canada can be found on page 115.

Current Status, Distribution, and Abundance in Montana

As of 2010, bison are listed by the Montana Natural Heritage Program (MNHP) and FWP as a “species of concern” (MNHP, 2010; FWP, 2010a). Species of concern “are native Montana animals that are considered to be ‘at risk’ due to declining population trends, threats to their habitat, and/or restricted distribution” (MNHP, 2010). FWP and MNHP have given bison an S2 state ranking and a G4 global ranking (MNHP, 2010; FWP, 2010a). An S2 status means the species is “at risk because of very limited and/or potentially

declining population numbers, range, and/or habitat, making it vulnerable to global extinction or extirpation in the state” (FWP and MNHP; 2010b). The G4 global ranking means that the species is “apparently secure, though it may be quite rare in parts of its range, and/or suspected to be declining” (FWP and MNHP, 2010b). The Montana Comprehensive Fish and Wildlife Conservation Strategy (CFWCS) lists bison as Tier 1, which are species in “greatest conservation need. Montana Fish, Wildlife & Parks has a clear obligation to use its resources to implement conservation actions that provide direct benefit to these species, communities, and focus areas” (FWP, 2005, pp. 32).



YNP bison on Horse Butte. PHOTO CREDIT: BFC

Within Montana there is currently one public captive herd, which resides within the National Bison Range and is co-managed by the U.S. Fish and Wildlife Service (USFWS) and the Confederated Salish and Kootenai Tribes. This is an actively managed herd, which is on a rotational grazing system and is annually rounded up to remove surplus animals and test for disease (Boyd, 2003). The herd is managed at approximately 400 bison on 18,500 fenced acres. Surplus bison are culled through livestock sales and transfer to native tribes (Boyd, 2003). Testing of the NBR herd by Ward (2000) found the presence of cattle DNA, both in mtDNA and in nuclear DNA.

The free-ranging bison that inhabit Yellowstone National Park exhibit limited seasonal movement beyond park boundaries into certain regions of Montana. This population is considered to be the only population of plains bison that has continuously existed in the wild in North America (Boyd, 2003). “After intensively managing bison numbers for 60 years through husbandry and regular culling, the National Park Service instituted a moratorium on culling in the park in 1969 and allowed bison numbers to fluctuate in response to weather, predators, and resource limitations. Abundance increased rapidly and large-scale bison migrations out of the park during the winter began in the late 1980s” (White et al., 2011a, pp. 17).

The bison that originate from the YNP herds have been designated as a “species in need of disease control” within the state of Montana and are managed under the Interagency Bison Management Plan (IBMP) (MCA §87-1-216). The primary goals of the IBMP are “to maintain a wild, free-ranging population of bison and address the risk of brucellosis transmission to protect the economic interest and viability of the livestock industry in Montana” (IBMP, 2000, pp. 1). Under the regulations set forth in the IBMP, bison originating within Yellowstone National Park are not permitted to maintain a year-round population or presence within Montana and are actively moved back into the park by government officials, with the exception of those found in the Absaroka-Beartooth Wilderness. Under the IBMP, bison may freely migrate into the Absaroka-Beartooth

Wilderness north of Yellowstone, including the upper portions of Hellroaring and Slough Creek, though the IBMP recognizes that due to the high elevations and rugged topography, few bison are expected to utilize this region (IBMP, 2000, pp. 1).

During the winter a limited number of bison are permitted to migrate outside of Yellowstone's western boundaries onto limited U.S. Forest Service (USFS) and private land between Grayling Creek and the South Fork of the Madison River. The bison that move into this region are hazed back inside the boundaries of the park annually prior to May 15 (IBMP, 2008). The IBMP recognizes that on occasion bison do move into the Cabin Creek



Bull bison outside West Yellowstone. PHOTO CREDIT: S. ADAMS

Recreation and Wildlife Management Area, the Monument Mountain Unit of the Lee Metcalf Wilderness, or into the Upper Gallatin River above the mouth of the Taylor Fork. The IBMP states that bison may winter in these areas with monitoring, but must return to within the boundaries of Yellowstone National Park in the spring. The IBMP notes that "bison may use these areas during all seasons provided they are not approaching the Taylor Fork cattle allotment" (IBMP, 2000, pp. 11–12). Through the work of regional conservation organizations, the permittee of the Taylor Fork cattle allotment has since transferred its cattle to another region and given up its allotment.

Under the original IBMP a limited number of bison are permitted to migrate outside Yellowstone National Park's northern boundaries in the Reese Creek area, west of the Yellowstone River and south of Yankee Jim Canyon. Within the original plan these bison were hazed back inside park boundaries prior to April 15 of each year (IBMP, 2000, pp. 8);



PHOTO CREDIT: J. PEACO; COURTESY NPS

however, through an adaptive process this date has been changed to May 1 (P. Flowers, Montana Fish, Wildlife & Parks, personal communication). Bison are also able to migrate into the Eagle Creek/Bear Creek region of Yellowstone's northern boundary and would not be hazed back into the park. However, "agencies will maintain a boundary at the Little Trail Creek/Maiden Basin hydrographic divide by hazing. Bison crossing the hydrographic divide will be subject to lethal removal" (IBMP, 2000, pp. 10).

In March of 2011, adaptive management adjustments were made to the IBMP that would increase the region where bison would be tolerated outside of the northern boundaries. The adaptive management adjustments “allow bison on habitat on U.S. Forest Service and other lands north of the park boundary and south of Yankee Jim Canyon. Bison would not be allowed north of the hydrological divide (i.e., mountain ridge-tops) between Dome Mountain/Paradise Valley and the Gardiner basin on the east side of the Yellowstone River and Tom Miner basin and the Gardiner basin on the west side of the Yellowstone River” (IBMP, 2011). The management adjustments ensure that the agencies will “evaluate the effects of these adjustments and modify as necessary to prevent bison from occupying lands north of the hydrological divide and minimize the risk of transmission of brucellosis to livestock” (IBMP, 2011). Following the release of these adaptive management adjustments, the Park County Stockgrowers Association and the Park County Commission both filed separate suits seeking to reverse the new management adjustments. Three conservation organization, Bear Creek Council, Greater Yellowstone Coalition, and Natural Resource Defense Council, under the representation of Earthjustice have requested permission from a court in Park County to intervene in state court, “asking the judge to reject the Stockgrowers’ and county’s demand to essentially keep bison confined to Yellowstone National Park” (Page et al., 2011).